MAP 4C Mid-Term Exam Review

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April 2017

1 Introduction

1.$a)(p-4)(p+5) = p^2+5p-4p-20 = p^2+p-20$
$b)(n+8)(n+2) = n^2+2n+8n+16 = n^2+10n+16$
$c)(m+3)(m-7) = m^2-7m+3m-21 = m^2-4m-21$
$d)(w-4)(w-6) = w^2-6w-4w+24 = w^2-10w+24$
$e)(2x-3)(5x-4) = 10x^2-8x-15x+12 = 10x^2-23x+20$
$f)(y-5)(2y+9) = 2y^2+9y-10y-45 = 2y^2-y-45$
$g)(3a+1)(4a+1) = 12a^2+3a+4a+1 = 12a^2+7a+1$
$h)(7-x)(4+x) = 28+4x-7x-x^2 = 28-3x-x^2$
$i)(x-6)(x+6) = x^2+6x-6x-36 = x^2-36$
$j)(x+2)^2 = x^2+2x+2x+4 = x^2+4x+4$
$k)(y+11)(y-11) = y^2-11y+11y-121 = y^2-121$
$l)(z-5)^2 = z^2-5z-5z+25 = z^2-10z+25$

2.$a)4(x-2)(3x-5) = (4x-8)(3x-5) = 12x^2-44x+40$
$b)(4x-3)^2-5(3x^2-5x+7) = 16x^2-24x+9-15x^2+25x-35 = x^2+x-26$

3.$a)(2x-5)(x+1) = 2x^2+2x-5x-5 = 2x^2-3x-5$
$b)5x(4x-1) = 20x^2-5X$
$(8x+3-4x-1)(2x-1) = (4x+2)(2x-1) = 8x^2-2$
$(20^2-5x)+(8x^2-2) = 28x^2-5x-2$

4.$a)(18-12x) = 6(3-2X)$
$b)21w^2-28w+35 = 7(3w^2-4w+5)$
$c)24x^2+16x = 8x(3x+2)$
$d)15a^3-20^2+25 = 5a(3a^2-4a+5)$
$e)20m^2-30m = 10m(2m-3)$
f)$27k^3-36k^5 = 9k^3(3-4k^2)$
g)$n^2-144 = (x+12)(x-12)$
h)$81-x^2 = (9+x)(9-x)$
i)$5m^2-80 = 5(m^2-16) = (m+4)(m-4)$
j)$10x^2-90 = 10(x^2-9) = 10(x+3)(x-3)$
k)$x^2+5x+6 = (x+2)(x+3)$
l)$a^2-a-30 = (a+5)(a-6)$

m)$x^2 + 3x - 10 = (x + 2)(x - 5)$
n)$m^2 - 9m + 20 = (m - 4)(m - 5)$
o)$x^2 + 6x - 27 = (x - 3)(x + 9)$
p)$3x^2 - 6x - 105 = 3(x^2 - 2x - 35) = 3(x + 5)(x - 7)$
q)$5x^2 + 17x + 6 = 5x^2 + 15x + 2x + 6 = (5x + 2)(x + 3)$
r)$5x^2 - 7x - 6 = 5x^2 + 3x - 10x - 6 = (x - 2)(5x + 3)$
s)$3x^2 + 10x + 3 = 3x^2 + 9x + x + 3 = (3X + 1)(X + 3)$
t)$2x^2 + 9x + 4 = (2x + 1)(x + 4)$